

WHAT IS CLAIMED IS:

- 1           1.       A solar powered distillation system, comprising:  
2           an extruded, molded or sprayed-on impermeable membrane lining a basin for  
3           containment.
- 1           2.       The solar powered distillation system of claim 1, wherein the extruded  
2           impermeable membrane is comprised of silicon.
- 1           3.       The solar powered distillation system of claim 2, wherein the silicon is a FDA  
2           approved food grade material.
- 1           4.       The solar powered distillation system of claim 3, wherein the silicon is Dow  
2           Corning 40.
- 1           5.       The solar powered distillation system of claim 4, wherein the silicon is black.
- 1           6.       The solar powered distillation system of claim 3, wherein the silicon is black.
7.       The solar powered distillation system of claim 6, wherein the silicon is Dow  
Corning 999-A.

1           8.     The solar powered distillation system of claim 1, wherein the basin is formed of  
2     an aluminum sided insulation, the aluminum siding covers the outside of the basin and the  
3     membrane covers the inside of the basin.

1           9.     The solar powered distillation system of claim 8, wherein the aluminum sided  
2     insulation is Thermax by Celotex.

1           10.    The solar powered distillation system of claim 9, further comprising:  
2           adjustable legs attached to said basin, said adjustable legs for supporting and leveling the  
3     distillation system to optimize the still efficiency.

1           11.    The solar powered distillation system of claim 10, further comprising:  
2           a carbon filter attached to an inlet or outlet of said solar power distillation system for  
3     removing various impurities.

1           12.    A solar powered distillation system comprising:  
2           a basin formed of an aluminum sided insulation.

1           13.    The solar powered distillation system of claim 12, wherein the insulation is  
2     polyisocyanurate.

1           14.    The solar powered distillation system of claim 12, wherein the aluminum sided  
2     insulation is Thermax by Celotex.

1           15.     The solar powered distillation system of claim 14, further comprising:  
2           an extruded, sprayed-on, or molded impermeable membrane lining said basin.

1           16.     A solar powered distillation system comprising:  
2           adjustable legs attached to said solar powered distillation system for supporting and  
3           leveling the distillation system.

1           17.     The solar powered distillation system of claim 16, further comprising:  
2           a basin made of aluminum sided insulation and having said adjustable legs attached  
3           thereto;  
4           an extruded or molded impermeable membrane lining said basin

1           18.     A solar powered distillation system comprising:  
2           a carbon filter for removing volatile organic compounds.

1           19.     The solar powered distillation system of claim 18, wherein the carbon filter is a  
2           silver impregnated activated carbon filter used to remove VOCs.

1           20.     The solar powered distillation system of claim 19, wherein the carbon filter is  
2           coupled to an inlet house.

1           21.     The solar powered distillation system of claim 20, wherein the carbon filter is  
2           coupled to an outlet house.

22. A method of forming a solar powered distillation system, comprising the steps of:  
forming an aluminum sided insulation sheet with notched out corners and grooves for  
folding sides of a basin from said aluminum sided sheet;  
bending notched ends of said aluminum sided insulation sheet to form said basin; and  
lining said basin with an extruded, molded, or sprayed-on impermeable membrane.